

GENERAL DYNAMICS/CONVAIR

SALES ORDER

Sold to: Cathay Pacific Airways, Ltd.  
Hong Kong

Date: 2 November 1964  
S. O. No: 880-26-17  
W. O. No: 30791

DELIVERY SHORTAGES  
CATHAY PACIFIC AIRWAYS, LIMITED

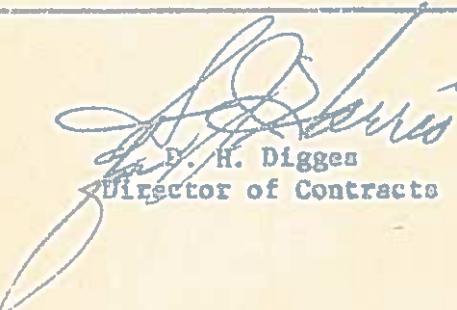
- (1) At the time of delivery of Convair 880, Model 22M Aircraft, Serial No. 43, Registration No. VR-HFT, the transfer of ownership was made with the following shortage:

Two (2) each First-Aid Kits

- (2) Material Department is authorized to procure two (2) each first-aid kits. Upon receipt, the kits are to be shipped to Cathay Pacific Airways, Ltd.

SJH:um

Log No. 174A

  
J. H. Digges  
Director of Contracts

GENERAL DYNAMICS/CONVAIR

SALES ORDER

Sold to: Cathay Pacific Airways, Ltd.  
Hong Kong

Date: 29 June 1964

S.O. # 880-26-15

W.O. # 30791

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EXCHANGE OF ENGINE - SHIP NO. 43

1. The engine originally installed in the Number four position in Ship No. 43 was, during test, found to be deficient in certain performance. This particular engine is to be removed and replaced with engine Serial No. 403-111 from airplane No. 45.
  2. The removed deficient engine is to be held pending further instructions.
  3. There is no cost to the customer in connection with this authorization.
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CJD:pj



D. H. Digges  
Director of Contracts

Log No. 873

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GENERAL DYNAMICS/CONVAIR

SALES ORDER

\* 14 July 1964

Sold to:	Cathay Pacific Airways Ltd. Hong Kong	Date:	18 June 1964
Reference:	(a) CPA letter KT/431/64 dated 21 May 1964 (b) Telecon George Byers/C.J. Dutton 14 July 1964	S. O. #	880-26-14
		W. O. #	30791

MODIFICATION OF KIFIS COMPUTER

1. Under Reference (a), the customer has authorized modification of First Officer's KIFIS Computer Part No. A-30710-00-002 into a Captain's position Computer which then will be identified as Part No. A-30710-00-006. This modification task is to be accomplished by Kollsman.

2. All concerned are hereby authorized to remove the above Computer and ship to Kollsman, Attention: Mr. J. Kane, Repair and Administration Dept., Kollsman, New York City, New York. Material Department is authorized to issue the necessary Purchase Order Requisition enabling procurement of the services required; coordination of the shipment shall be accomplished under Material Department cognizance; **airshipment is authorized pursuant to Reference (b) in order to protect schedule.**

3. Costs under this authorization are to be accumulated for reimbursement by the customer and related invoicing is to be originated for processing to Cathay Pacific at time of delivery of the aircraft.

*[Signature]*  
Revised 7-14-64 to amend para. 2  
and add Ref. (b). CJD:pj

*[Signature]*  
D. H. Digges  
Director of Contracts

CJD:pj

Log No. 882 906

CATHAY PACIFIC AIRWAYS MINUTES

Reference (a) Sales Order 680-26-14

MODIFICATION OF KIFIS COMPUTER

In accordance with Reference (a), Sales Order, the First Officer's KIFIS Computer, Part No. A-30710-00-002 is being reworked by Kollsman Instrument Company into a captain's position computer, Part No. A-30710-00-009.

ACTION: Engineering to submit appropriate EWO's to the Program Office to reflect the above change.

*E. J. Savard for*  
A. J. Savard  
880/990 Program Office

cc: C. J. Dutton  
T. Whelan  
W. F. Brown/W. Fitzsimons  
Minutes File  
W. T. Dorrance  
S. W. Swenson

GENERAL DYNAMICS/CONVAIR

SALES ORDER

Sold to:	Cathay Pacific Airways Ltd. Hong Kong	Date:	18 June 1964
Reference:	(a) CPA letter KT/431/64 dated 21 May 1964	S.O. #	880-26-13
	(b) CPA letter KT/504/64 dated 12 June 1964	W.O. #	30791
	(c) Sales Order 880-26-11		

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PREPARATION FOR DELIVERY OF SHIP NO. 43 TO CATHAY PACIFIC

1. In accordance with the request contained in Reference (a) and (b) letters, the following action is to be taken in connection with the preparation of Ship No. 43 for delivery to the customer:

- (a) Registry Letters VR-HFT are to be painted on the wings and tail of the aircraft in accordance with Drawing 22-98906.
- (b) SEL CAL code letters CJ-DH are to be assigned to the aircraft and the Dual Motorola SEL CAL Receiver is to be adjusted to this coding.

2. There is no cost to the customer in connection with this authorization.

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CJD:pj

  
D. H. Digges  
Director of Contracts

Log No. 854

CATHAY PACIFIC AIRWAYS MINUTES

Reference (a) Sales Order 880-6-13

PREPARATION FOR DELIVERY OF SHIP No. 43 TO CATHAY PACIFIC

In accordance with Reference (a) Sales Order, the following are to be accomplished on aircraft 22-00-43 during preparation for delivery.

- (a) Registry letters VR-HFT are to be painted on the wings and tail of the aircraft in accordance with Dwg. 22-98906.
- (b) SEL CAL Code letters CJ-DH are to be assigned to the aircraft. The dual SEL CAL Receiver is to be adjusted to this coding. (Note receivers have been adjusted to the CJ-DH call letters.)

ACTION: Engineering to submit appropriate EWO's to the Program Office to reflect the above change.



A. J. Savard  
880/990 Program Office

Cc: C. J. Dutton  
T. Whelan  
W. F. Brown/W. Fitzsimons  
W. T. Dorrance  
Minutes File  
S. W. Swenson

SALES ORDER

Sold to:	Cathay Pacific Airways Limited Hong Kong, B.C.C.	Date:	31 March 1964
Reference:	(a) Purchase Agreement between General Dynamics Corporation and Cathay Pacific Airways Limited dated 20 March 1964	S. O. No:	880-26-11
	(b) Telecon between C. Z. German and C. J. Dutton 31 March 1964	W. O. No:	30791

(Page 1)

SALE OF CONVAIR 880M, SERIAL NO. 43

- (1) Reference (a) Purchase Agreement has been executed by Convair and Cathay Pacific providing for the sale of the following:
- (a) 1 Convair 880, Model 22M Aircraft, Serial No. 43, manufactured in accordance with Detail Specification, Report No. ZD-22-325 dated 1 February 1961 together with Addendum No. VI thereto dated 5 May 1961 through Revision 4 thereto.
- (b) 1 General Electric CJ-805-3B Engine (Serial No. 207)
- 1 Q.E.C.
- 1 Sound Suppressor
- (2) The aircraft shall be prepared for flight and tendered for delivery to the Buyer, serviced except for fuel, ready for flight not later than 15 October 1964. Field Operations will prepare aircraft for acceptance flight, and Production Flight Department will conduct a demonstration flight of the aircraft on or before 15 October 1964 but not in excess of a total of three (3) flying hours (not excluding preliminary shakedown flights) in order to demonstrate to Buyer the satisfactory functioning of the aircraft and its equipment.
- (3) Based upon previous arrangements made with General Electric Company, Material Department is authorized to make necessary arrangements to transfer title of one (1) CJ-805-23B engine to General Electric in exchange for transfer of title by General Electric to Convair of one (1) CJ-805-3B engine, Serial No. 207, which has been operated approximately 2000 hours. Information concerning required delivery date of -3B engine from General Electric will be the subject of a revision to this Sales Order. Sound Suppressor mentioned in Paragraph (1) above is also to be procured from General Electric, preferably with delivery schedule compatible with that of the engine which is to be without overhaul and with 2000 hours use (Reference (b)).

SALES ORDERSold to: Cathay Pacific Airways Limited  
Hong Kong, B.C.C.

Date: 31 March 1964

Reference: (See Page 1)

S. O. No: 880-26-11

W. O. No: 30791

(Page 2)

- (4) The coach seats called out under Appendix I-C of the Detail Specification, except for one (1) double left-hand seat, are not included in this sale and will not be installed in the aircraft upon delivery.
- (5) Service Publications will make available the following data prepared, where applicable, in accordance with the Convair Specification CS-59-045 dated 8 September 1959:

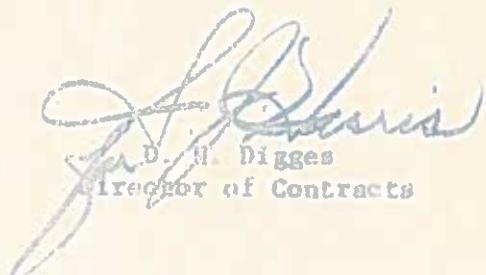
(1) Service Handbooks - Original (at no extra charge)

<u>Item</u>	<u>Quantity</u>
(aa) FAA Flight Manual	1 reproduced copy upon delivery of the Aircraft
(bb) Pilot's Handbook	1 reproduced copy
(cc) Maintenance Manual	1 reproduced copy
(dd) Wiring Diagram	1 reproduced copy

(2) Weight and Balance Data (at no extra charge)

<u>Item</u>	<u>Quantity</u>
Convair Weight and Balance Status report	2 reproduced copies

S JH



J. D. M. Digges  
Director of Contracts

CATHAY PACIFIC AIRWAYS MINUTES

Reference (a) Sales Order 880-26-11

SALE OF CONVAIR 880M, SERIAL NO. 43

In accordance with the Reference (a) Sales Order, action as required is to be accomplished for the following:

- (a) The coach seats called out under Appendix I-C of the Detail Specification, except for one (1) double left-hand seat, are not included in this sale and will not be installed in the aircraft upon delivery.
- (b) Weight and Balance Report.

Note: Engineering action already initiated, on Item (b).

  
A. J. Savard  
880/990 Program Office

cc: C. J. Dutton  
T. Whelan  
W. F. Brown/W. Fitzsimons  
W. T. Dorrance  
Minutes File  
S. W. Swenson

GENERAL DYNAMICS/CONVAIR

Sold to: Cathay Pacific Airways Limited  
Hong Kong

Reference: (a) GD/Convair - Cathay Pacific  
Airways Letter Agreement  
dated 1 May 1963

SALES ORDER

Revised 13 June 1963  
Date: 6 May 1963

S. O. No. 880-26-10

W. O. No. 30732

PILOT ASSIGNMENT -  
CATHAY PACIFIC AIRWAYS LIMITED

1. Pursuant to Reference (a), this Sales Order authorizes the assignment of U. S. Johnson, Convair Flight Captain, to Cathay Pacific Airways for a period of 30 days commencing on or about 8 May 1963.

Accounting Department only:

2. Accounting Department is requested upon completion of the assignment authorized hereunder to invoice Cathay Pacific in the amount of \$3,990.00 covering Mr. Johnson's services for a 30 day period plus Mr. Johnson's air transportation from San Diego to Hong Kong and return.
3. This revision authorizes the Accounting Department to prepare and submit to Cathay Pacific Airways Ltd. an invoice in the amount of \$3,990.00 plus transportation costs to cover expenditures accumulated under Paragraph 1. above and in accordance with Reference (a); one copy of invoice is to be forwarded to Contracts Department.

ELM:ls

Log No. 885 1136

\*Revised to add Para. 3.

*P. H. Digges*  
P. H. Digges  
Director of Contracts

GENERAL DYNAMICS/CONVAIR

W E Fitzsimmons  
SALES ORDER

6-12-23

Sold to: Cathay Pacific Airways Limited  
Hong Kong

Date: 27 September 1962

SO No: 880-26-9

Reference: (a) GD/Convair - Cathay Pacific Airways  
Letter Agreement dated 10 May 1962

WO No: 30,000 Series

CONVAIR FLIGHT CREW ASSISTANCE  
CATHAY PACIFIC AIRWAYS LIMITED

- (1) In accordance with Reference (a) Letter Agreement, this Sales Order authorizes the Flight Department to provide Cathay Pacific Airways the services of Flight Captain U. S. Johnson and Flight Engineer C. J. Falkenthal for the period commencing 28 May 1962 and no longer than 15 August 1962.
- (2) Pursuant to paragraph (1) above it is requested that the Accounting Dept. prepare and submit to Contracts Dept. an invoice in the amount of \$18,117.00 covering Messrs. Johnson and Flakenthal's services from 28 May 1962 through 13 August 1962.

RLW/lt

Log No. 1861

*for R. H. Winterger*  
F. S. Chambers  
Director of Contracts

GENERAL DYNAMICS/CONVAIR

Sales Order

Sold to: Cathay Pacific Airways Limited  
Hong Kong

Date: 26 March 1962

SO No: 880-26-7

Reference: (a) Memo, V.F. Cernuto to R.L. Wintringer,  
dated 5 March 1962  
(b) Memo, V.F. Cernuto to R.L. Wintringer,  
dated 14 March 1962

WO No: 30,000 Series

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INCORPORATION OF SERVICE BULLETINS -  
CATHAY PACIFIC SHIP 47

(1) In accordance with References (a) and (b), this Sales Order authorizes those departments concerned to proceed with incorporation of the Service Bulletins, outlined under Reference (a) and Reference (b) memos, in Cathay Pacific Model 22M (Ship 47).

It is understood that the aircraft will be laid up, for this purpose, for a period not to exceed three days commencing 26 March 1962.

*RLW:hs*

Log No 709

*F. S. Chambers*  
F. S. Chambers  
Manager of Contracts

Revised: 9 March 1962

Subject: Commercial Flight Training \*\*\*Revised: 30 March 1962  
 Original date: 7 February 1962  
 Issued by: Commercial Flight Training  
 Dated: 8 March 1962  
 CTA Purchase Order No. 0008  
 Dated: 7 March 1962

## FLIGHT TRAINING - CATHAY PACIFIC AIRWAYS LIMITED

Subject to reference that the Flight Department is conducting a flight training program for Cathay Pacific engineers as shown in Paragraph (1) above. It is hereby advised that the reference in Paragraph (1) of the Sales Agreement has been executed by CTA, per reference to the CTA flight training program.

The Flight Department is authorized to furnish all facilities and a real time maintenance required for the training aircraft during the course of said program.

Charges connecting with this Sales Order, including the cost of parts are to be charged to Work Order No. 30,732. Work charges on this Work Order will be those costs associated with any spare parts required to support this program. It is also recognized that engine alignment and engine calibration was required previously in the conduct of the CTA flight training program. The costs associated with this task shall also be charged to Work Order No. 30,732.

It is requested the Accounting Department submit to Contractor by separate invoice, those charges related to spare parts, engine oil and engine calibration specifically mentioned in Paragraph (1) above. A separate fee should cover those charges related directly to the CTA flight training program. By revision to this Sales Order the Accounting Department will be notified where particularly required in preparation of invoices.

The Flight Department will advise Commercial Contracts by memorandum the amount of blocks to clock flight hours of flight training conducted by Cathay Pacific.

In accordance with Article 11(d) of the General Dynamics/Contractor Commercial Purchase Agreement, authorization is hereby granted for the conduct of flight training on Saturdays as necessary to supplement the training schedule previously established between Cathay and CTA. The CTA flight training shall also be conducted on Sunday, March 11, 1962.

Under Paragraph 11 Agreement, one (1) pilot and one (1) engineer will be assigned to Cathay Pacific to assist in the conduct of flight training on aircraft in Hong Kong for a period of 30 days.

Page 282 701 163

Revised to add last sentence in Para. (8).

Revised to change Para. (8).

Supervised to add last sentence to Para. (8).

F. S. C. 1000

GENERAL DYNAMICS/CONVAIR

Digitized by srujanika@gmail.com

Sold to: Cathay Pacific Airways Limited  
Hong Kong

\*\*\*Revised: 30 March 1962  
Sales Order (Page Two)

**Reference: (See Page One.)**

Date: 8 March 1962

SO No: 880-26-6  
HO No: 30,732

billings anticipated under this authorization.

How far?

RLW: 163

for /s/ J. L. McLean  
F. S Chambers  
Manager of Contracts

GENERAL DYNAMICS/CONVAIR

Sales Order

Sold to: Cathay Pacific Airways Limited Date: 30 January 1962  
Hong Kong

Reference: (a) Cathay Letter, KP/1039/61, SO No: 880-26-5  
dated 28 November 1961 WO No: 30,000 Series

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CATHAY PACIFIC - MODEL 22M  
REGISTRATION NUMBER

- (1) Cathay Pacific Registration No. VR-HFS has been assigned for identifying the one (1) Model 22M aircraft, Production Serial No. 47.
- (2) All concerned are to proceed accordingly with this authorization.

*RLW:ha*

Log No 394

*for R. L. McIntyre*  
P. S. Chambers  
Manager of Contracts

GENERAL DYNAMICS/CONVAIR

*Gilzenrom*  
6-122B

Sales Order

\*Revised: 26 September 1962

\*Revised: 1 March 1962

Sold to: Cathay Pacific Airways Limited  
Hong Kong

Date: 16 January 1962

Reference: (a) Letter Agreement, 11-0-5537,  
dated 29 December 1961

SO No: 880-26-4

WO No: 30,731  
79/977/H/1144

CATHAY PACIFIC MODEL 22M MAINTENANCE TRAINING PROGRAM

- (1) Pursuant to the referenced Letter Agreement executed by and between General Dynamics/Convair, Hong Kong Aircraft Engineering Co. Ltd., and Cathay Pacific Airways Limited, this Sales Order authorizes the lower Service-Transport to conduct the Model 22M maintenance training program for BAEC at their facility in Hong Kong.
- (2) Said training program, normally conducted at San Diego, as outlined under Article 11(c) of the Purchase Agreement between General Dynamics/Convair and Cathay Pacific, shall not exceed the normal six (6) week period with an additional week allowed for travel to and from Hong Kong.
- (3) This Sales Order further authorizes travel and per diem for four (4) instructors to conduct said training program with BAEC.
- (4) This revision authorizes the Accounting Department to invoice Hong Kong Aircraft Engineering Co. Ltd. in the amount of \$12,500 to cover the above authorized training program.

11-0-5537

Log No. 254 563 1846

*RP*  
\*Revised to change Work Order number.

\*Revised to add para. (4)

*J. B. Chambers*  
J. B. Chambers  
Manager of Contracts

Cathay Pacific Airways Limited  
Hong Kong

Revised: 20 March 1962  
 Date: 19 December 1961  
 SO No: 880-26-3  
 NO No: 50,000 Series

CATHAY PACIFIC MODEL 880M CUSTOMER FURNISHED EQUIPMENT

- (1) The Cathay Model 880M Detail Specification includes no customer furnished, Convair installed equipment; however, Cathay has purchased certain vendor spares which will be forwarded to Convair, San Diego, and will be stowed aboard Cathay Pacific aircraft (Ship 47) at the time the aircraft is being modified for its ferry flight to Hong Kong. Until such time as the Cathay Pacific Model 880M aircraft is delivered and ferried to Hong Kong, it is requested that the CFE section of the Material Department follow the instructions outlined below covering the receiving and storing of all such equipment.
- a) All Cathay Pacific customer furnished equipment will be clearly identified as "Cathay Pacific, care of Convair - hold at San Diego for up-lift on delivery flight of Ship #47".
  - b) No accountability records or inspection is to be performed on any packages received and identified as outlined under subparagraph (a) above.
  - c) The Receiving Department is to forward all such material upon receipt to the CFE Crib Section, Rose Canyon, where all items are to be held pending revision to this Sales Order. Commercial Contracts Department is to be furnished four (4) copies each of receiving reports showing receipt of such material and said receiving reports will be transmitted to the customer for his records.
- (2) It is anticipated Cathay Pacific aircraft will depart for Hong Kong approximately 26 March 1962. Accordingly, and by revision to this Sales Order, the CFE section of the Material Department will be instructed to forward the subject equipment to Ship 47 where it will be stowed aboard as loose equipment.
- (3) Any documentation that may be required in exporting this equipment will be so outlined by revision to this Sales Order in the near future.
- (4) The following disposition shall be made to all Cathay Pacific material presently located in the CFE Crib at Rose Canyon:
- (a) On 28 March 1962 the six wooden crates marked "CARE" shall be transferred to the Cathay Pacific aircraft Field Operations and loaded aboard the aircraft in time to support an 0800, 29 March departure for Los Angeles. (The aircraft will return to San Diego at approximately 1300, 29 March.)
  - (b) All remaining Cathay Pacific material at Rose Canyon, CFE Crib Section shall be transferred to the Cathay aircraft at Field Operations on 29 March. This material is to be loaded aboard the aircraft 30 March in time to support aircraft departure for Hong Kong at 0800, 31 March.

Log No. 684

Revised to add Para. (4).

*Chambers*  
by F. B. Chambers  
Manager of Contracts N

GENERAL DYNAMICS/CONVAIR

Sales Order

Sold to: Cathay Pacific Airways Ltd.  
Hong Kong

Date: 14 December 1961

Reference

Reference: (a) Letter of Agreement between  
General Dynamics/Convair and  
Cathay Pacific dated  
12 December 1961

SO No: 880-26-2

WO No: 30,000 Series

SHIPMENT OF BUFFET UNITS TO NORDSKOG

- (1) Reference (a) sets forth arrangements for the shipment of one ship set of galleys identical to those installed in Aircraft No. 47 to Nordskog Company in Los Angeles for modifications which will be performed under a separate agreement between Cathay Pacific and Nordskog.
- (2) Accordingly, this Sales Order authorizes departments concerned to effect the immediate shipment of one ship set of galleys to the following address:

Nordskog Company Inc.  
16000 Strathern Street  
Van Nuys, California

Shipping instructions shall be issued by Manufacturing Control.

- (3) The galleys presently installed in Aircraft No. 47 will remain installed until the aircraft has been certificated and delivered to the customer, at which time departments concerned are authorized to remove said galleys from Aircraft No. 47 and hold for installation in some other aircraft.
- (4) Convair has no responsibility with respect to, or in connection with, the modification of the galleys being shipped to Nordskog or the subsequent installation of said modified galleys in the Cathay Pacific airplane.

ELM/R

Log No. 3386

  
F. S. Chambers  
Manager of Contracts

## SALES ORDER

Filed to: Cathay Pacific Airways Limited  
Hong Kong

Revised: 28 November 1961

Date: 14 November 1961

SO No: 880-26-1

References: (a) Cathay Pacific letter  
J. H. Bremridge to  
E. J. Williams dated  
27 September 1961  
(b) TWX Bremridge to Comley  
dated 24 November 1961

WO No: 30,000 Series

SALE OF ONE (1) MODEL 880M AIRCRAFT  
TO CATHAY PACIFIC AIRWAYS LIMITED

- (1) This Sales Order notifies all departments concerned of the sale of one (1) Model 22M aircraft by Convair to Cathay Pacific Airways Limited.
- (2) Accordingly, all departments concerned are hereby directed to proceed with the completion of aircraft 22-3-5 (Ship No. 47) in accordance with Detail Specification Report ZD-22-325, dated 1 February 1961 together with Addendum VI, dated 5 May 1961 as revised 21-October 20 November 1961.
- (3) The aircraft shall be tendered for delivery to Cathay Pacific on or about 5 February 1962 in the configuration as described under paragraph (2) above.
- (4) The point of delivery of said aircraft shall be in San Diego, California. All expenses of, or in connection with, flyaway from San Diego, California, shall be borne by Cathay Pacific Airways Limited.
- (5) Customer Service, in coordination with the Engineering and Flight Departments, shall prepare and deliver all handbooks, information and data in quantities and at the time set out in Article 11 of the Purchase Agreement.
- (6) The flight department shall proceed with the schedule covering pilot's ground school and flight training in accordance with the plan previously established by and between Convair and Cathay Pacific Airways.

## SALES ORDER

Sold to: Cathay Pacific Airways Limited  
Hong Kong

Reference: See Page One

Page two

Revised: 28 November 1961  
Date: 24 November 1961

SD No: 880-24-1

WO No: 30,000 Series

SALE OF ONE (1) MODEL 880M AIRCRAFT  
TO CATHAY PACIFIC AIRWAYS LIMITED

- (7) Negotiations are presently being conducted between Convair and Hong Kong Aircraft Engineering Company Limited concerning a maintenance training program. Instructions with respect to this program will be outlined by revision to this Sales Order upon completion of these negotiations. Customer Service will furnish Cathay Pacific the services of a field service representative as specified in Article 11 of the Purchase Agreement.

R.L.W.

*Revised*  
Revised to Amend paragraph (2) & (3)

*Shanklin*  
F. S. Chambers  
Manager of Contracts

~~Revised~~  
6142

CATHAY PACIFIC MINUTES

28 November 1961

No. 1  
Model 22-3 #5

Reference: (a) Sales Order 880-26-1 dated  
24 November 1961.

As evidenced by reference (a), the Engineering Department is authorized to support the task required to prepare Ship 22-00-47 (22-3 #5) for delivery to Cathay Pacific Airways, Ltd. in February 1962.

It is the intent to deliver this airplane in the configuration as currently released by the Engineering Department with the exception of the exterior markings.

ACTION: The Weights Group and Furnishings Group are to prepare applicable EWO's for the accomplishment of the task as described above. EWO's are to be submitted to the Project Office prior to November 30, 1961.

*F. Herbert Sharp*

F. Herbert Sharp  
Project Engineer

FHS:MLC:gt

## CUSTOMER SERVICE FIELD REPORT

FOR CONVAIR USE-ON

REC'D BY  
**BILL**  
**POUMA**  
DATE REC'D  
4/10  
REPLY BY  
4/17

DATE 7 April 62 CODE 22M-77.3c.0 PAGE 1 OF 5  
 REPORT BY Harry L. Addis TITLE TFSE  
 CUSTOMER Cathay Pacific/Maecc BASE Hong Kong  
 AFL MODEL 22-3 UU-47 AFL SERIAL # VR-31FS TIME  
 REPLY REQUESTED YES  NO  SEND REPLY TO Writer  
 SUBJECT SET Thermocouple Harness. Polarity of Leads in,

## DISTRIBUTION

REF &amp; ENCL (a) CV Spec 0-09001

FLD  OTHERS  
 AHF  
 SAL  
 SERV PUB  
 SERV PTS  
 SERV ENG  
 SERV UPN  
 P D   
 QUAL COMT  
 AERO  
 DYN  
 THER-MO  
 FLT TEST  
 HYDR PHEU  
 CONT  
 MECH LDB  
 PROP   
 AIR COND  
 ELECTRIC  
 ELECTRON  
 FURN  
 ARMT  
 GRD SUP  
 BODY  
 VLT STRU  
 WHTS 3000  
 HF REL  
 PROJECT NO.

After engine change, and during pre-run check, the polarity of the subject harness and thermocouple Alumel-Chromel leads was queried.

Research of ref (a), indicated the wire color coding and the Mil Standard 33560, on pages 3-71 and 3-71-1. The drawing and the text do not agree. This is noted for your convenience.

MS 33560 drawing

WIRE	COLOR	POLARITY	SPIN SIZE
Alumel	Yellow or Green	Negative	Small
Chromel	White or Red	Positive	Large

Text on Page 3-71-1

Alumel-Commercial	<del>Red</del> Red	Negative	Magnetic
Military	Green		

Chromel-Commercial	Yellow	Positive	Non-magnetic
Military	White		

CV B/P 22-65501 and 22-65502 indicate the Alumel is RED and the Chromel is YELLOW.

From the foregoing there appears to be an error in the text in regard to the color code of the wire used.

Please advise if the polarity shown on the MS 33560 is correct.

GE Overhaul information indicates Thermocouple terminals A-D are Alumel, while Terminals B-C are Chromel. If this is correct then A-D should be + and B-C should be -.

## Passing note:

My copy of ref (a) has a late revision dated 15 April 1960. If there have been subsequent revisions, please obtain same and forward to me.

RECEIVED

APR 25 '62

DATA &  
PROCEDURES  
ADMIN.

GENERAL DYNAMICS/CONVAIR

Harry Addis' report dated 7 April 1962

REPLY

18 April 1962

Enclosure: (A) Specification 0-09001 dated 10/1/61

The colors in the MS33560 spec are not as you indicated, but are as follows: Alumel-Green, Chromel-White (8 ohm system); Constantan-Yellow, Copper-Red (22 ohm system).

The polarity shown on MS33560 is correct.

G.E. Overhaul Manual (GEI-77339) on the Servo Temperature Indicator Type DJ-100 figure 8, page 21/22 shows contact A-Alumel negative-magnetic; contact D-Chromel positive-non-magnetic. Your Reference (a) document reflects same. We do not understand your implication.

  
W. M. LeFleur

WML:WDL:kr  
6820-3000